

THE INFLUENCE OF INDOOR TEMPERATURE AND RELATIVE HUMIDITY ON BUILDING-RELATED SYMPTOMS AMONG NON-SMOKING OFFICE EMPLOYEES

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Background and Aims: Building-related symptoms and complaints experienced in non-industrial buildings remain important issues. This study investigated whether indoor temperature and relative humidity (RH) was associated with risk of building-related symptoms among non-smoking office employees.

Methods: We performed on-site measurements of indoor air temperature and RH during working hours for 87 office units of 8 randomly selected government agencies and commercial organizations. All of these offices located in high-rise buildings with heating, ventilation and air condition (HVAC) in the Taipei city, Taiwan. With informed consents, 417 healthy subjects worked at these office units completed the self-reported questionnaires for measures of the presence of building-related symptoms experienced at work within a month.

Results: The prevalence rates of building-related syndromes are 22.5% for eye, 15.3% for upper respiratory, 6.5% for lower respiratory, 1.9% for skin dryness and 22.4% for non-specific syndromes. The Multivariable generalized estimating equations logistic regression analyses showed that the adjusted odds ratios per increase of 1 °C of indoor temperature was statistically significant for Sneezing (1.51), difficulty in breathing (2.09) and dizziness (1.69). The adjusted odds ratios per 1% increases in RH was statistically significant for runny nose (1.30), sneezing (1.19), Tiredness (1.07), difficulty concentrating (1.07) and skin dryness (0.81).

Conclusions: Elevated indoor temperature and RH correlate to increased risks of some symptoms among upper respiratory, lower respiratory, and non-specific syndromes, while increased indoor RH tends to protect non-smoking office employees from suffering eye dryness in this study.